

APPENDIX 10

STATEMENT OF HARRIS BUSCH, M.D., PH.D.

1. I, Harris Busch, M.D., Ph.D., am a physician and toxicologist, and have for many years been engaged in the evaluation, investigation and research of drugs and pharmaceuticals. I have reviewed much of the worlds literature as to the safety and efficacy of DES (Diethylstilbestrol) when used in pregnancy. I have been qualified as an expert on this topic in Federal and State courts in the past. My curriculum vitae is attached hereto as Appendix A.

2. By 1956 the medical literature raised significant questions as to the risks or dangers to the future potential pregnancy function of the developing female, exposed in utero to DES. (See list of some of the pre-1956 medical literature attached hereto as Appendix B.) This literature could have and should have alerted a reasonably prudent pharmaceutical seller to the need for further human and animal testing, and investigation of DES in pregnancy, and the danger of promoting the drug for use to pregnant women without undertaking further generational testing. Had appropriate animal and human testing and investigation of this issue been conducted the danger of prenatal exposure to DES daughters and their pregnancy function impairment would have become apparent prior to 1956.

3. The basis for my opinions as to the practices, procedures, responsibilities, and obligations of pharmaceutical manufacturers comes from my experience as a consultant to the pharmaceutical manufacturers, my education, training, and experience as a medical toxicologist, as well as symposia, teaching, and professional activities.

4. The following principles were well known in the scientific community before 1956:
- a. Animal models in proper strains existed which showed transplacental DES risks to the exposed female fetus reproductive tract suggestive of pregnancy dysfunction to the exposed developing daughter;
 - b. Hormones, estrogen, DES, and other agents were reported to have transplacental transport ability in animals and humans creating offspring toxicity;

- c. Synthetic estrogen (DES) was reported to cause malformation, metaplasia and dysplasia in relevant animal species;
- d. Other drug companies did conduct offspring studies on drugs prior to marketing;
- e. Synthetic estrogen (DES) affected specific reproductive target organs (i.e. uterus and cervix) in the daughter of the recipient;
- f. Prenatal exposure to estrogen caused intersexuality in relevant test animals - - feminization of males, masculinization of females, and other malformations of the reproductive tract (DES is an estrogen); and
- g. Synthetic estrogen (DES) dosage regimens recommended in human pregnancy were hundreds of times the previous recommended therapeutic levels recommended for use to effect reproductive organs in the recipient.

5. I have reviewed the relevant sections of the defendant's literature which omits any careful consideration of the 1939 Raynaud study (intersexuality in mice), the 1939 Greene, Burrill and Ivy (feminization, gonadal, vaginal and sexual tract retardation and changes in offspring exposed in utero to DES), the 1940 Zuckerman synopsis of estrogen's teratological effects on the reproductive tract, or the 1949 Burrows study (newborn females exposed in utero to estrin born with cornification of the vagina and distended uterine horns). These omissions were substantial and the inclusion of these risks would have warned the government and the medical profession of these risks and most likely would have decreased or prevented the use of this drug by pregnant women.

6. Eli Lilly and Company did not conduct adequate follow-up studies, in animals or humans, to determine the long-term delayed effects of DES on the sexual tract of the exposed fetus. The failure of the defendant to conduct adequate long-term generational animal testing designed to investigate or reproduce the transplacental effects from DES was a departure from prudent standards of pharmaceutical manufacture, distribution, and promotion standards as they existed at that time in

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7. The defendant should have tested DES to study, determine, evaluate, demonstrate, or reproduce toxicity of a teratologic nature, whether immediate or delayed, to the female offspring, whether human or animal, exposed to DES early in pregnancy. Adequate investigation of the questions raised by the literature would have revealed the risks to the pregnant daughter previously exposed in utero and to her subsequent offspring due to premature delivery.

8. With evidence linking the action of DES to reproductive tract changes in the offspring of DES exposed animals, and in the presence of literature relating reproductive organ anomalies in offspring exposed to DES, a reasonably prudent manufacturer should have undertaken studies indicated by the Van Winkle rules (JAMA, 1944) designed to fully evaluate the potential toxicity of DES, including:

- a. Complete literature reviews of all data relating to DES and the development of reproductive organ anomalies in offspring exposed to DES;
- b. Complete literature review of other hormone related reproductive organ anomalies in offspring exposed to those agents; and
- c. Complete and thorough clinical, laboratory, tissue and autopsy review of each case of offspring reproductive organ anomalies associated with DES and other hormone exposure in utero.

The defendant's failure to conduct these tests was below the accepted standards of prudent and careful pharmaceutical practice.

9. DES as labeled and with its then warnings, was an unreasonably dangerous and defective product in the mid-1950's.

Dated:

June 29, 1999

Harris Busch
HARRIS BUSCH, M.D., PH.D.